WEST Search History

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DATE: Tuesday, March 29, 2005

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		DB=PGPB,USPT; PLUR=YES; OP=ADJ	
☐	L7	l5 and (plastid or chloroplast) [clm]	23
☐	L6	L4 and homologous recombination	321
☐	L5	L4 and (lox or cre or flp or frt)	177
☐	L4	L3 and transgenic	637
☐	L3	L2 and excis$	848
☐	L2	L1 and site specific	1459
☐	L1	plastid or chloroplast	6569

END OF SEARCH HISTORY

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 NEWS  3  FEB 25   CA/CAPLUS - Russian Agency for Patents and Trademarks
                   (ROSPATENT) added to list of core patent offices covered
 NEWS  4  FEB 28   PATDPAFULL - New display fields provide for legal status
                   data from INPADOC
 NEWS  5  FEB 28   BABS - Current-awareness alerts (SDIs) available
 NEWS  6  FEB 28   MEDLINE/LMEDLINE reloaded
 NEWS  7  MAR 02   GBFULL: New full-text patent database on STN
 NEWS  8  MAR 03   REGISTRY/ZREGISTRY - Sequence annotations enhanced
 NEWS  9  MAR 03   MEDLINE file segment of TOXCENTER reloaded
 NEWS  10 MAR 22   KOREAPAT now updated monthly; patent information enhanced
 NEWS  11 MAR 22   Original IDE display format returns to REGISTRY/ZREGISTRY
 NEWS  12 MAR 22   PATDPASPC - New patent database available
 NEWS  13 MAR 22   REGISTRY/ZREGISTRY enhanced with experimental property tags

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               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

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FILE 'HOME' ENTERED AT 17:09:18 ON 29 MAR 2005

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                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.63       0.63

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FILE 'CAPLUS' ENTERED AT 17:11:00 ON 29 MAR 2005
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```
=> s plastid or chloroplast
L1       80679 PLASTID OR CHLOROPLAST

=> s l1 and site specific
L2         261 L1 AND SITE SPECIFIC

=> s l2 and transgenic
L3          47 L2 AND TRANSGENIC

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4           34 DUP REM L3 (13 DUPLICATES REMOVED)

=> d 1-10 ti

L4   ANSWER 1 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Unidirectional site-specific integration system for
     integrating a nucleic acid into the genome of a target cell

L4   ANSWER 2 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Removal of heterologous sequences, such as selectable marker genes, from
     plastid genome by transiently expressed site-
     specific recombinases in higher plants

L4   ANSWER 3 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Plant transformation with in vivo assembly of a sequence of interest

L4   ANSWER 4 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Method of controlling cellular process in plants by externally applied
     signal

L4   ANSWER 5 OF 34  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2005) on STN
TI   A novel approach to plastid transformation utilizes the phiC31
     phage integrase.

L4   ANSWER 6 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Selection of transgenic organisms by selecting for loss of a
     growth inhibiting marker gene

L4   ANSWER 7 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Method for the transformation of vegetable plastids

L4   ANSWER 8 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   Stable transformation of plants by integration of transforming DNA into
     the plastid genome by homing nuclease-mediated homologous
     recombination

L4   ANSWER 9 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
TI   High level expression of immunogenic proteins in the plastids of higher
     plants and use thereof

L4   ANSWER 10 OF 34  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2005) on STN
TI   Identification of functional lox sites in the plastid genome.


=> d 2 so

L4   ANSWER 2 OF 34  CAPLUS  COPYRIGHT 2005 ACS on STN
SO   PCT Int. Appl., 47 pp.
     CODEN: PIXXD2
```

=> d 2 pi

L4 ANSWER 2 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004078935	A2	20040916	WO 2004-US6492	20040303

PI WO 2004078935 A2 20040916

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 2 ab

L4 ANSWER 2 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

AB Compns. and methods for manipulating the **plastid** genome of higher plants are provided. The methods of the invention may be employed to remove predetd. target sequences from the **plastid** genome, such as selectable marker genes following successful isolation of transformed progeny. In one embodiment of the invention, the method entails providing a transplastomic plant cell comprising plastids having heterologous nucleic acid sequence(s) flanked by excision sites and a nucleic acid sequence encoding at least one foreign gene of interest which is not flanked by excision sites. The plant cell is then contacted with a DNA construct which comprises a promoter operably linked to a nucleic acid encoding a protein having excision activity such as CRE, resolvase, FLP, SSVI-encoded integrase, phiC31 integrase and transposases.

=> d 3 ab

L4 ANSWER 3 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

AB A process of producing **transgenic** plants or plant cells stably transformed on a chromosome with a DNA sequence of interest and capable of expressing a function of interest from said DNA sequence of interest, said process comprising (a) providing plant cells or plants with at least two different vectors, whereby (i) said at least two different vectors are adapted to recombine with each other by **site-specific** recombination in said plant cells for producing a non-replicating recombination product containing said DNA sequence of interest, (ii) said at least two different vectors are adapted for integrating said DNA sequence of interest into said chromosome, (iii) said DNA sequence of interest contains sequence portions from at least two of said at least two different vectors, said sequence portions being necessary for expressing said function of interest from said DNA sequence of interest; and (b) selecting plants or plant cells expressing said function of interest.

=> d 2 pi

L4 ANSWER 2 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004078935	A2	20040916	WO 2004-US6492	20040303

PI WO 2004078935 A2 20040916

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN,

IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC,
LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX,
MZ, MZ, NA, NI
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 6 ab

L4 ANSWER 6 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB The present invention relates to creation and selection of genetically modified organisms by **site-specific** integration and expression of toxin/antidote genes within a recombinant host genome. Homologous recombination enables targeted integration of the exogenous gene(s) within the genome of the cell or organism. A toxic gene from the gene set of CcdB, ParE, RelE, Kid, Doc, MazE, PemK and HoK, regulated by an inducible promoter, is integrated into a host cell line genome. An antidote gene from the gene set of CcdA, Kis, Phd, PemI, and Sok, also regulated by an inducible promoter, is integrated into the same recombinant cell line genome. Inducible promoters allow for tissue- or developmental stage-specific expression of the exogenous genes within the recombinant cell. Using the appropriate signal sequences, toxin and antidote protein expression can be targeted to the mitochondria or **chloroplast**. This expression system is used as a means for selection of genetically modified eukaryotic organisms, such as plants, animals (mammals), and microbes (yeast).

=> d 6 pi

L4 ANSWER 6 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003078638	A1	20030925	WO 2003-BE45	20030319
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2477194	AA	20030925	CA 2003-2477194	20030319
EP 1485491	A1	20041215	EP 2003-709457	20030319
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

=> d 7 ab

L4 ANSWER 7 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB Methods of achieving stable transformation of plants by integrating the transforming DNA into the **plastid** genome by **site-specific** integration are described. Integration is achieved by the use of known sequence-specific recombination mechanisms, such as cre/loxP, or through the use of homing endonucleases with large recognition sequences. Plants are constructed in which a sequence-specific recombination site is introduced into the **plastid** DNA. These plants are then transformed with a DNA containing the cognate recombination sequence and the gene for the corresponding recombinase and transformants selected. The expression construct may include elements such as **plastid**-specific promoters and selection markers and the recombinase may be retained in the

plastid by a transit peptide. The method achieves a high efficiency of integration of the transforming DNA into the **plastid** DNA.

=> d 7 pi

L4 ANSWER 7 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003054201	A1	20030703	WO 2002-EP14303	20021216

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1461439	A1	20040929	EP 2002-805324	20021216

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

=> d 8 ab

L4 ANSWER 8 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

AB Methods of achieving stable transformation of plants by integrating the transforming DNA into the **plastid** genome by **site-specific** integration are described. Integration is achieved by the use of known sequence-specific recombination mechanisms, especially by the use of homing endonucleases with large recognition sequences. Plants are constructed in which a homing endonuclease cleavage site is introduced into the **plastid** DNA. These plants are then transformed with a DNA containing the cognate recombination sequence and the gene for the corresponding enzyme and transformants selected. The expression construct may include elements such as **plastid**-specific promoters and selection markers and the enzyme may be retained in the **plastid** by a transit peptide. The method achieves a high efficiency of integration of the transforming DNA into the **plastid** DNA.

=> d 8 pi

L4 ANSWER 8 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003054189	A2	20030703	WO 2002-EP14302	20021216
WO 2003054189	A3	20040304		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1458875	A2	20040922	EP 2002-795200	20021216

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

=> d 9 ab

L4 ANSWER 9 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB A **site specific** recombination system and methods of use thereof are disclosed for manipulating the genome of higher plants. The methods and systems of the invention may be employed to remove heterologous sequences from the **plastid** genome, such as selectable marker genes following successful isolation of transformed progeny. Alternatively, they may be designed to remove endogenous genes involved in plant cell metabolism, growth, development and fertility. Compns. and methods for expressing immunogenic proteins using the **site specific** recombination system are also provided.

=> d 9 pi

L4 ANSWER 9 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003088081	A1	20030508	US 2002-109812	20020329
WO 2001021768	A1	20010329	WO 2000-US25930	20000921
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
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WO 2003083086	A2	20031009	WO 2003-US9970	20030331
WO 2003083086	A3	20040819		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1495118	A2	20050112	EP 2003-718140	20030331
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

=> d 10 ab

L4 ANSWER 10 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
AB Our objective was to test whether or not cyclization recombination (CRE), the P1 phage **site-specific** recombinase, induces genome rearrangements in plastids. Testing was carried out in tobacco plants in which a DNA sequence, located between two inversely oriented locus of X-over of P1 (loxP) sites, underwent repeated cycles of inversions as a means of monitoring CRE activity. We report here that CRE mediates deletions between loxP sites and **plastid** DNA sequences in the 3' rps12 gene leader (lox-rps12) or in the psbA promoter core (lox-psbA). We also observed deletions between two directly oriented lox-psbA sites, but not between lox-rps12 sites. Deletion via duplicated rRNA operon promoter (Prrn) sequences was also frequent in CRE-active plants. However, CRE-mediated recombination is probably not directly involved, as no recombination junction between loxP and Prrn could be observed. Tobacco plants carrying deleted genomes as a minor fraction of the **plastid** genome population were fertile and phenotypically normal, suggesting that the absence of deleted genome segments was compensated by gene expression from wild-type copies. The deleted **plastid** genomes disappeared

in the seed progeny lacking CRE. Observed **plastid** genome rearrangements are specific to engineered **plastid** genomes, which contain at least one loxP site or duplicated psbA promoter sequences. The wild-type **plastid** genome is expected to be stable, even if CRE is present in the **plastid**.

=> d 10 pi
'PI' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):so

L4 ANSWER 10 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
SO Plant journal, 2003 Sept. Vol. 35, no. 6 p. 753-762
ISSN: 0960-7412

=> d 11-20 ti

L4 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
TI Expression of the B subunit of E. coli heat-labile enterotoxin in the chloroplasts of plants and its characterization

L4 ANSWER 12 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 2
TI Marker-free **transgenic** plants.

L4 ANSWER 13 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
TI **Chloroplast** Transformation in Oilseed Rape

L4 ANSWER 14 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Antibiotic resistance genes in **transgenic** plants: their origins, undesirability and technologies for their elimination from genetically modified crops

L4 ANSWER 15 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
TI The **plastid** clpP1 protease gene is essential for plant development.

L4 ANSWER 16 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Methods of enhancing and optimizing expression of exogenes in **transgenic** plants

L4 ANSWER 17 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Construction of bicistronic-transgene expression vectors containing internal ribosome entry site (IRES) regulated selectable marker for **transgenic** plants

L4 ANSWER 18 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 4
TI Analysis of **chloroplast** transformed tobacco plants with cry1Ia5 under rice psbA transcriptional elements reveal high level expression of Bt toxin without imposing yield penalty and stable inheritance of transplastome.

L4 ANSWER 19 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Site-specific** integration of insect-resistant gene into **chloroplast** genome of oilseed rape and acquisition of **transgenic** plants

L4 ANSWER 20 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
TI Positive, negative and marker-free strategies for **transgenic** plant selection

=> d 11 ab

L4 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
AB **Transgenic** chloroplasts have become attractive systems for heterologous gene expressions because of unique advantages. Here, we report a feasibility study for producing the nontoxic B subunit of Escherichia coli heat-labile enterotoxin (LTB) via **chloroplast** transformation of tobacco. Stable **site-specific** integration of the LTB gene into **chloroplast** genome was confirmed by PCR and genomic Southern blot anal. in transformed plants. Immunoblot anal. indicated that plant-derived LTB protein was oligomeric, and dissociated after boiling. Pentameric LTB mols. were the dominant mol. species in LTB isolated from **transgenic** tobacco leaf tissues. The amount of LTB protein detected in transplastomic tobacco leaf was approx. 2.5% of the total soluble plant protein, approx. 250-fold higher than in plants generated via nuclear transformation. The GM1-ELISA binding assay indicated that **chloroplast**-synthesized LTB protein bound to GM1-ganglioside receptors. LTB protein with biochem. properties identical to native LTB protein in the **chloroplast** of edible plants opens the way for inexpensive, safe, and effective plant-based edible vaccines for humans and animals.

=> d 22 so

L4 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2

=> d 22 pi

L4 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001040492	A2	20010607	WO 2000-US42086	20001113
	WO 2001040492	A3	20020207		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6723896	B1	20040420	US 1999-439534	19991112
	CA 2391312	AA	20010607	CA 2000-2391312	20001113
	EP 1232275	A2	20020821	EP 2000-992497	20001113
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2004143874	A1	20040722	US 2004-755275	20040113

=> d 11 pi

L4 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1

=> d 11 so

L4 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
SO Transgenic Research (2003), 12(6), 683-691
CODEN: TRSEES; ISSN: 0962-8819

=> d 12 so

L4 ANSWER 12 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 2
SO Plant cell, tissue and organ culture, 2003 Aug. Vol. 74, no. 2 p. 123-134
ISSN: 0167-6857

=> d 12 ab

L4 ANSWER 12 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 2
AB Selectable marker genes are widely used for the efficient transformation of crop plants. In most cases, selection is based on antibiotic or herbicide resistance. Due mainly to consumer concerns, a suite of strategies (**site-specific** recombination, homologous recombination, transposition and co-transformation) have been developed to eliminate the marker gene from the nuclear or **chloroplast** genome after selection. Current efforts concentrate on systems where marker genes are eliminated efficiently soon after transformation. Alternatively, **transgenic** plants are produced by the use of marker genes that do not rely on antibiotic or herbicide resistance but instead promote regeneration after transformation. Here, the merits and shortcomings of different approaches and possible directions for their future development are discussed.

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L4 ANSWER 13 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
AB The **chloroplast** transformation vector pNRAB carries two expression cassettes for the spectinomycin resistance gene aadA and the insect resistance gene cry1Aa10. The two cassettes are sited between the rps7 and ndhB targeting fragments. Biolistic delivery of the vector DNA, followed by spectinomycin selection, yielded **chloroplast** transformants at a frequency of four in 1000 bombarded cotyledon petioles. PCR anal. and Southern blot of PCR products confirmed the **site-specific** integration of aadA and cry1Aa10 into the **chloroplast** genomes of **transgenic** oilseed rape. When **transgenic** oilseed rape leaves were fed to second instar Plutella xylostera larvae, 47% mortality was observed against this insect and the surviving larvae had significantly lower weight than the control. This is the first report of **chloroplast** transformation in oilseed rape and the introduction of novel genes between the rps7 and ndhB genes in the **chloroplast** genome. This offers an opportunity for improvement of oilseed rape by **chloroplast** genetic engineering.

=> d 13 so

L4 ANSWER 13 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
SO Transgenic Research (2003), 12(1), 111-114
CODEN: TRSEES; ISSN: 0962-8819

=> d 14 ab

L4 ANSWER 14 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review, with refs. Plant transformation technologies use antibiotic resistance genes as markers to identify the small fraction of **transgenic** cells that have taken up trait genes. In addition to plant selectable marker genes, vector-localized genes such as the ampicillin resistance bla(TEM1) gene, can also integrate into the chromosomes of **transgenic** plants. Integration of vector sequences is particularly problematic when whole plasmids integrate into plant nuclear DNA following their transfer into cells by artificial DNA delivery methods such as particle bombardment. Microbial resistance to antibiotics threatens the success of infectious disease treatment and prevention in the 21st century. While the risk of horizontal transfer of antibiotic resistance genes is minuscule, their elimination from genetically manipulated crops provides a simple solution for ending the continuing debate over the likelihood of pathogen acquisition of plant-derived antibiotic resistance genes. To avoid the presence of antibiotic resistance genes in **transgenic** crops, they can be removed once they have served their purpose or they can be replaced with alternative marker genes. These two approaches are not mutually exclusive and can be combined where needed to avoid safety evaluations on each new marker gene. This chapter reviews technologies for removing antibiotic resistance genes from **transgenic** plants and describes an expanding list of alternative marker genes that do not require antibiotic selection. **Plastid** engineering illustrates the ease with which both antibiotic resistance genes and vector sequences can be removed from plants using homologous recombination. Efficient marker gene excision technologies and alternative marker genes combine for a better toolkit for the next generation of **transgenic** crops. This toolkit will facilitate multiple rounds of transformation with the best marker for a particular crop and allow the removal of all excess foreign DNA from a crop. As a consequence the focus of attention will shift from the marker genes to the all important trait genes that are responsible for the added value of genetically manipulated crops.

=> d 14 so

L4 ANSWER 14 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
SO Transgenic Plants (2003), 111-156. Editor(s): Stewart, C. Neal, Jr. Publisher: Horizon Scientific Press, Wymondham, UK.
CODEN: 69ECK5; ISBN: 1-898486-44-1

=> d 15 ab

L4 ANSWER 15 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
AB Plastids of higher plants are semi-autonomous cellular organelles that have their own genome and transcription-translation machinery. Examples of **plastid** functions are photosynthesis and biosynthesis of starch, amino acids, lipids and pigments. **Plastid** functions are encoded in 120 **plastid** genes and 3,000 nuclear genes. Although many embryo and seedling lethal nuclear genes are required for **chloroplast** biogenesis, until now deletion of **plastid** genes either had no phenotypic consequence (8 genes), or caused a mutant phenotype but did not affect viability (13 genes). Here we identify an essential **plastid** gene. By using the CRE-lox **site-specific** recombination system we have deleted clpP1 (caseinolytic protease P1), one of the three genes (clpP1, ycf1 and ycf2) whose

disruption had previously only been possible in a fraction of the 1,000-10,000 **plastid** genome copies in a cell. Loss of the clpP1 gene product, the ClpP1 protease subunit, results in ablation of the shoot system of tobacco plants, suggesting that ClpP1-mediated protein degradation is essential for shoot development.

=> d 15 so

L4 ANSWER 15 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
SO Nature, 2003 Sept. 4 Vol. 425, no. 6953 p. 86-89
ISSN: 0028-0836

=> d 20 so

L4 ANSWER 20 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
SO Brazilian Journal of Plant Physiology (2002), 14(1), 1-10
CODEN: BJPPBR; ISSN: 1677-0420

=> d 21-30 ti

L4 ANSWER 21 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Excision of selection marker gene in **transgenic** plant for reducing health and environment risk

L4 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Inducible **site-specific** recombination for the activation and removal of transgenes in **transgenic** plants

L4 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Site-specific** recombination system to manipulate the **plastid** genome of higher plants

L4 ANSWER 24 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Removal of antibiotic resistance genes from **transgenic** tobacco plastids. [Erratum to document cited in CA135:14859]

L4 ANSWER 25 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
TI Efficient elimination of selectable marker genes from the **plastid** genome by the CRE-lox **site-specific** recombination system.

L4 ANSWER 26 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 7
TI Edited transcripts compete with unedited mRNAs for trans-acting editing factors in higher plant chloroplasts

L4 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Removal of antibiotic resistance genes from **transgenic** tobacco plastids

L4 ANSWER 28 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
TI Green fluorescent protein expression constructs for use as a screenable marker for plant transformation

L4 ANSWER 29 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8
TI A heterologous maize rpoB editing site is recognized by **transgenic** tobacco chloroplasts

L4 ANSWER 30 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States

of America. It contains copyrighted materials. All rights reserved.
(2005) on STN
TI In vivo dissection of cis-acting determinants for **plastid** RNA editing.

=> d 21 ab

L4 ANSWER 21 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB Antibiotic resistance gene is commonly used as selection marker in construction of **transgenic** plants. However, the inheritance of antibiotic resistance gene is thought as a risk for health and environment. The invention provides method for producing a **transgenic** plant comprising a recombinant **plastid** genome containing an exogenous gene in the absence of a selectable marker gene introduced with the exogenous gene by using direct repeat sequences, nucleic acid constructs containing direct repeat sequences which may be used in the method and **transgenic** plants produced by the method. The invention provides detailed description about plasmid construction, transformation, excision of marker gene by irrigation and crossing. The **transgenic** tobacco provides in this invention without selection marker bar gene showed resistance to herbicide. The method provides in this invention can be used to improve the quality of **transgenic** crop plants by producing genetic hazard free plants.

=> d 21 so

L4 ANSWER 21 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
SO PCT Int. Appl., 59 pp.
CODEN: PIXXD2

=> d 21 pi

L4 ANSWER 21 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001081600	A2	20011101	WO 2001-GB1761	20010420
	WO 2001081600	A3	20020314		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2405364	AA	20011101	CA 2001-2405364	20010420
	EP 1276884	A2	20030122	EP 2001-921634	20010420
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003530888	T2	20031021	JP 2001-578671	20010420
	US 2003188337	A1	20031002	US 2003-258253	20030325

=> d 22 ab

L4 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB Disclosed is an inducible promoter system in conjunction with a **site-specific** recombination system which allows (i) specific activation of transgenes at specific times or (ii) excision and removal of transgenes (e.g., antibiotic resistance markers) from **transgenic** plants. These "suicide" gene cassettes, including the recombination system itself, can be evicted from the plant genome once their function has been exerted. The system is based on the ability to temporally and spatially induce the expression of CRE recombinase which

then binds to directly repeated lox sites flanking the transgene in question leading to the precise excision of the gene cassette. Also disclosed is a method to activate an inverted, and therefore silent, transgene by placing two lox sites in opposite orientations flanking the transgene. This results in inversion of the intervening DNA fragment in the presence of CRE recombinase. This activation can be timed by placing the CRE recombinase under the control of an inducible promoter. In order to test this system a construct was designed that allows in planta monitoring of precise excision events using the firefly luciferase (LUC) reporter gene as a marker for recombination.

=> d 22 pi

L4 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001040492	A2	20010607	WO 2000-US42086	20001113
	WO 2001040492	A3	20020207		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6723896	B1	20040420	US 1999-439534	19991112
	CA 2391312	AA	20010607	CA 2000-2391312	20001113
	EP 1232275	A2	20020821	EP 2000-992497	20001113
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2004143874	A1	20040722	US 2004-755275	20040113

=> d 23 ab

L4 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

AB A **site specific** recombination system and methods of use thereof are disclosed for manipulating the genome of higher plants. The present invention provides a bacteriophage P1 CRE-loxP **site-specific** recombination system which is suitable for efficient elimination of marker genes from the **plastid** genome. The system exemplified has two components : a **plastid** tester strain carrying a cytosine deaminase (codA) transgene flanked by lox sites conferring sensitivity to 5-fluorocytosine and a nuclear CRE line carrying a nuclear-encoded, **plastid**-targeted CRE. The selection marker gene codA is eliminated at a very fast rate when the **plastid** -targeted CRE is introduced into the **plastid** tester strain by transformation or crossing. CRE-mediated inversion reaction can be achieved by inverting the orientation of the marker gene (flanked by inverted lox sites) relative to its promoter. The method can be used to obtain marker free transplastomic plants through Cre-mediated deletion, for high level expression of recombinant proteins and to obtain cytoplasmic male sterility by deleting vital **plastid** genes.

=> d 23 pi

L4 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001021768	A1	20010329	WO 2000-US25930	20000921
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,				

SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2385484	AA	20010329	CA 2000-2385484		20000921
EP 1218488	A1	20020703	EP 2000-963696		20000921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL					
US 2003088081	A1	20030508	US 2002-109812		20020329

=> d 24 ab

L4 ANSWER 24 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB In the Exptl. Protocol under "Generation and anal. of transplastomic plants", the values of several compds. were incorrectly noted. Shoots and green cell lines were selected on spectinomycin dihydrochloride pentahydrate (Duchefa, Haarlem, The Netherlands) plus streptomycin sulfate (Sigma, St. Louis, MO), each at 500 μg/mL. Clones were transferred to RMOP medium containing 5 μ/mL glufosinate-ammonium (Dr. Ehrenstorfer GmbH, Augsburg, Germany) after 9-34 wk for a second cycle of regeneration. The 42 herbicide-resistant clones were rooted on MS medium containing 1 μ/mL glufosinate-ammonium and transferred to soil.

=> d 24 so

L4 ANSWER 24 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
SO Nature Biotechnology (2001), 19(2), 173
CODEN: NABIF9; ISSN: 1087-0156

=> d 25 ab

L4 ANSWER 25 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
AB Incorporation of a selectable marker gene during transformation is essential to obtain transformed plastids. However, once transformation is accomplished, having the marker gene becomes undesirable. Here we report on adapting the P1 bacteriophage CRE-lox **site-specific** recombination system for the elimination of marker genes from the **plastid** genome. The system was tested by the elimination of a negative selectable marker, codA, which is flanked by two directly oriented lox sites (>codA>). Highly efficient elimination of >codA> was triggered by introduction of a nuclear-encoded **plastid**-targeted CRE by Agrobacterium transformation or via pollen. Excision of >codA> in tissue culture cells was frequently accompanied by a large deletion of a **plastid** genome segment which includes the tRNA-Val(UAC) gene. However, the large deletions were absent when cre was introduced by pollination. Thus pollination is our preferred protocol for the introduction of cre. Removal of the >codA> coding region occurred at a dramatic speed, in striking contrast to the slow and gradual build-up of **transgenic** copies during **plastid** transformation. The nuclear cre gene could subsequently be removed by segregation in the seed progeny. The modified CRE-lox system described here will be a highly efficient tool to obtain marker-free transplastomic plants.

=> d 25 so

L4 ANSWER 25 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
SO The Plant journal : for cell and molecular biology, July 2001. Vol. 27,

No. 2. p. 171-178
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 25 au

L4 ANSWER 25 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
AU Corneille, S.; Lutz, K.; Svab, Z.; Maliga, P.

=> d 26 ab

L4 ANSWER 26 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 7
AB **Chloroplast** RNA transcripts of vascular plants undergo C to U editing at approx. 30 sites, but there is no consensus sequence that identifies a C to be edited. Both sequences closely surrounding an edited C and unidentified **site-specific** trans-acting factors have been shown to be important for editing. The ability of an already edited **transgenic** sequence to bind and thus titrate a trans-acting editing factor was evaluated for two editing sites, ndhF and rpoB site 2. The U-containing rpoB transcripts did not affect editing of the endogenous rpoB transcripts, likely because the comparable C-containing transcripts containing 27 nucleotides surrounding the edited C were only 20% edited, indicating a low affinity of a trans-factor for this length of edited sequence. Surprisingly, U-containing ndhF transgene transcripts reduced endogenous ndhF transcript editing to the same degree as a C-containing transgene transcript. This indicates that the C target of editing is not a critical recognition feature for the **site-specific** trans-acting factor.

=> d 27 sab
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L4 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB Removal of antibiotic resistance genes from genetically modified (GM) crops removes the risk of their transfer to the environment or gut microbes. Integration of foreign genes into **plastid** DNA enhances containment in crops that inherit their plastids maternally. Efficient **plastid** transformation requires the aadA marker gene, which confers resistance to the antibiotics spectinomycin and streptomycin. The authors have exploited **plastid** DNA recombination and cytoplasmic sorting to remove aadA from transplastomic tobacco plants. A 4.9 kbp insert, composed of aadA flanked by bar and uidA genes, was integrated into **plastid** DNA and selected to remove wild-type **plastid** genomes. The bar gene confers tolerance to the herbicide glufosinate despite being GC-rich. Excision of aadA and uidA mediated by two 174 bp direct repeats generated aadA-free T0 transplastomic plants containing the bar gene. Removal of aadA and bar by three 418 bp direct repeats allowed the isolation of marker-free T2 plants containing a **plastid**-located uidA reporter gene.

=> d 27 so

L4 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
SO Nature Biotechnology (2000), 18(11), 1172-1176
CODEN: NABIF9; ISSN: 1087-0156

=> d 27 au

L4 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AU Lamtham, Siriluck; Day, Anil

=> d 28 ab

L4 ANSWER 28 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN
AB A method for the production of **transgenic** plants is provided in which a vector carrying a gene encoding the green fluorescent protein is introduced into cells, the cells are screened for the protein and transformed cells are selected and regenerated. The cellular toxicity of the green fluorescent protein is circumvented by regulating expression of the gene encoding the protein or directing the protein to a subcellular compartment where it is not toxic to the cell. DNA constructs are provided for cell transformation in which the expression of a gene encoding the green fluorescent protein is placed under the control of an inducible promoter. In addition, DNA constructs are provided in which a nucleotide sequence encoding the green fluorescent protein is operably linked to a signal sequence which directs the expressed protein to a subcellular compartment where the protein is not toxic to the cell. Oxidative stress to plant cells transformed with GFP also can be ameliorated by transforming cells with an expression vector comprising genes encoding GFP and an oxygen scavenger enzyme such as superoxide dismutase. The toxicity of GFP in transformed plants can be eliminated by excising the screenable marker gene following detection of transformed cells or sectors. The FLP/FRT system is used in conjunction with GFP as a visible marker for transformation and FRT excision. A nucleotide sequence optimized for expression of the green fluorescent protein in plants is also provided. The use of the protein as a marker in the transformation and regeneration of maize is described. The efficiency of transformation with the GFP screenable marker was comparable to that with bialaphos as selectable marker.

=> d 28 pi

L4 ANSWER 28 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9741228	A2	19971106	WO 1997-US7688	19970501
	WO 9741228	A3	19971211		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	CA 2252412	AA	19971106	CA 1997-2252412	19970501
	AU 9729983	A1	19971119	AU 1997-29983	19970501
	AU 730927	B2	20010322		
	EP 904371	A2	19990331	EP 1997-924601	19970501
	EP 904371	B1	20040922		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	AT 277177	E	20041015	AT 1997-924601	19970501
	US 6486382	B1	20021126	US 1999-214909	19991220

=> d 29 ab

L4 ANSWER 29 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8
AB Single nucleotides in plant **chloroplast** transcripts are edited from the genomically encoded C to U, often resulting in changes of the

encoded protein sequence. **Site-specific** trans-acting factors are postulated to direct the selection of edited residues. In order to further define cis sequences required for RNA editing, we investigated whether two editing sites present in maize rpoB mRNA would be recognized by the editing machinery of transformed tobacco chloroplasts. A 93-nucleotide (nt) segment surrounding site I is sufficient to direct editing of the maize sequence in tobacco chloroplasts. However, an 86-nt segment surrounding maize site IV (which is genomically encoded as a T in tobacco) does not confer editing of this site, suggesting that trans-acting factors necessary for recognition of site IV are not present in tobacco. The maize sequences surrounding site I were found to compete with the endogenous rpoB for a depletable trans factor and to reduce editing of endogenous site I. The presence of exogenous maize site I was also found to decrease editing of endogenous tobacco site II, indicating that there is a shared aspect of editing for some closely spaced editing sites.

=> d 30 ab

L4 ANSWER 30 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

AB Substitutional RNA editing changes single C nucleotides in higher plant **chloroplast** transcripts into U residues. To determine the cis-acting sequence elements involved in plastic RNA editing, we constructed a series of **chloroplast** transformation vectors harboring selected editing sites of the tobacco ndhB transcript in a chimeric context. The constructs were inserted into the tobacco plastic genome by biolistic transformation leading to the production of stable chimeric RNAs. Analysis of RNA editing revealed unexpected differences in the size of the essential cis elements or in their distance from the editing site. Flanking sequences of identical size direct virtually complete editing for one pair of editing sites, partial editing for a second and no editing at all for a third pair of sites. Serial 5' and 3' deletions allowed us to define the cis-acting elements more precisely and to identify a sequence element essential for editing site recognition. In addition, a single nucleotide substitution immediately upstream of an editing position was introduced. This mutation was found drastically and selectively to reduce the editing efficiency of the downstream editing site, demonstrating that position -1 is important for either site recognition or catalysis. Our results indicate that the editing of adjacent sites is likely to be mechanistically coupled. In no case did the presence in the plastome of the additional editing sites have any effect on the editing efficiency of the endogenous ndhB sites, indicating that the availability of **site-specific** trans-acting factors is not rate limiting.

=> d 31-34 ti

L4 ANSWER 31 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI **Site-specific** factor involved in the editing of the psbL mRNA in tobacco plastids.

L4 ANSWER 32 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI Introduction of a heterologous editing site into the tobacco **plastid** genome: the lack of RNA editing leads to a mutant phenotype.

L4 ANSWER 33 OF 34 CAPLUS COPYRIGHT 2005 ACS on STN

TI Evidence for T-DNA mediated gene targeting to tobacco chloroplasts

L4 ANSWER 34 OF 34 AGRICOLA Compiled and distributed by the National
    Agricultural Library of the Department of Agriculture of the United States
    of America. It contains copyrighted materials. All rights reserved.
    (2005) on STN   DUPLICATE 9
TI GT-1 binding site confers light responsive expression in
    transgenic tobacco.

=> dis his

    (FILE 'HOME' ENTERED AT 17:09:18 ON 29 MAR 2005)

    FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 17:11:00 ON 29 MAR 2005
L1   80679 S PLASTID OR CHLOROPLAST
L2   261 S L1 AND SITE SPECIFIC
L3   47 S L2 AND TRANSGENIC
L4   34 DUP REM L3 (13 DUPLICATES REMOVED)

=> s l1 and recombinase
L5   20 L1 AND RECOMBINASE

=> dup rem ml5
ENTER L# LIST OR (END):15
'ML5' IS NOT VALID. VALID FILE NAMES ARE 'AGRICOLA, CAPLUS, BIOSIS'
You have entered a file name of duplicates to keep that is not
referenced by any of the L#s specified for this DUPLICATE command.
The file names of duplicates that can be kept are listed above.
Please enter one of these file names.

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6   14 DUP REM L5 (6 DUPLICATES REMOVED)

=> d 1-10 ti

L6 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Removal of heterologous sequences, such as selectable marker genes, from
    plastid genome by transiently expressed site-specific recombinases
    in higher plants

L6 ANSWER 2 OF 14 AGRICOLA Compiled and distributed by the National
    Agricultural Library of the Department of Agriculture of the United States
    of America. It contains copyrighted materials. All rights reserved.
    (2005) on STN   DUPLICATE 1
TI A novel approach to **plastid** transformation utilizes the phiC31
    phage integrase.

L6 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
TI Generation of marker-free **plastid** transformants using a
    transiently cointegrated selection gene

L6 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method for enhancing plant **plastid** transformation efficiency
    using procaryotic **recombinase** gene recA

L6 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Method for the transformation of vegetable plastids

L6 ANSWER 6 OF 14 AGRICOLA Compiled and distributed by the National
    Agricultural Library of the Department of Agriculture of the United States
    of America. It contains copyrighted materials. All rights reserved.
    (2005) on STN   DUPLICATE 3
TI Identification of functional lox sites in the **plastid** genome.

L6 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Double D-loop formation in duplex nucleic acid with **recombinase**

and modified oligonucleotides and applications

L6 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Use of integrases to promote the insertion of foreign DNA into the **plastid** genome

L6 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Construction of bicistronic-transgene expression vectors containing internal ribosome entry site (IRES) regulated selectable marker for transgenic plants

L6 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Inducible site-specific recombination for the activation and removal of transgenes in transgenic plants

=> d 3 ab

L6 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
AB Genetic engineering of higher plant plastids typically involves stable introduction of antibiotic resistance genes as selection markers. Even though **chloroplast** genes are maternally inherited in most crops, the possibility of marker transfer to wild relatives or microorganisms cannot be completely excluded. Furthermore, marker expression can be a substantial metabolic drain. Therefore, efficient methods for complete marker removal from **plastid** transformants are necessary. One method to remove the selection gene from higher plant plastids is based on loop-out recombination, a process difficult to control because selection of homoplastomic transformants is unpredictable. Another method uses the CRE/lox system, but requires addnl. retransformation and sexual crossing for introduction and subsequent removal of the CRE **recombinase**. Here we describe the generation of marker-free **chloroplast** transformants in tobacco using the reconstitution of wild-type pigmentation in combination with **plastid** transformation vectors, which prevent stable integration of the kanamycin selection marker. One benefit of a procedure using mutants is that marker-free **plastid** transformants can be produced directly in the first generation (T0) without retransformation or crossing.

=> d 3 pi

L6 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2

=> d 3 so

L6 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
SO Nature Biotechnology (2004), 22(2), 225-229
CODEN: NABIF9; ISSN: 1087-0156

=> d 4 ab

L6 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
AB The objective of this invention is to enhance the efficiency of **plastid** transformation using nuclear transformed plants in which the microbial **recombinase** A(recA) is to target to (or expressed in) the **plastid**. This invention will be better explained by the following detailed descriptions. A plant is transformed with a nuclear transformation vector containing the microbial recA gene added with a **plastid** targeting sequence. In this nuclear transformed plant, the frequency of **plastid** transformation is enhanced greater than two-folds due to increased homologous recombination between the **plastid** transformation vector carrying genes of interest (or target genes) and the **plastid** genome. In addition, because **plastid** transformation is accomplished through a gradual process, adventitious shoots selected after being subjected to **plastid**

transformation should be cut into explants, and then shoots regenerated from the explants are to be reselected until all of the plastids in the shoots are uniformly transformed. However, when the nuclear transformed plant is used, the number of reselection is reduced to 1/2 to 1/3 due to increased homologous recombination.

=> d 4 pi

L6 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003060137	A1	20030724	WO 2002-KR2506	20021231
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	KR 2002027383	A	20020413	KR 2002-218	20020103

=> d 8 ab

L6 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

AB Compns. and methods for improving the efficiency of **plastid** transformation of plants are described. The method involves using a **recombinase** to promote integration of the transforming DNA into the **plastid**. The method has several stages. In the first stage a recombination site is introduced into the **plastid** DNA. The transformed line is the transformed with a vector including the gene of interest, and a selectable marker if necessary, and a transient expression cassette for an integrase or **recombinase** recognizing the recombination site. This promotes integration of the transforming DNA into the **plastid** DNA. Excision of the insert is prevented by limiting expression of the **recombinase** gene. Alternatively, the integrase gene may also be stably integrated into the **plastid** genome.

=> d 8 pi

L6 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002079409	A2	20021010	WO 2002-US9537	20020329
	WO 2002079409	A3	20030508		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2004163145	A1	20040819	US 2004-473207	20040310

=> d 10 ab

L6 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

AB Disclosed is an inducible promoter system in conjunction with a

site-specific recombination system which allows (i) specific activation of transgenes at specific times or (ii) excision and removal of transgenes (e.g., antibiotic resistance markers) from transgenic plants. These "suicide" gene cassettes, including the recombination system itself, can be evicted from the plant genome once their function has been exerted. The system is based on the ability to temporally and spatially induce the expression of CRE **recombinase** which then binds to directly repeated lox sites flanking the transgene in question leading to the precise excision of the gene cassette. Also disclosed is a method to activate an inverted, and therefore silent, transgene by placing two lox sites in opposite orientations flanking the transgene. This results in inversion of the intervening DNA fragment in the presence of CRE **recombinase**. This activation can be timed by placing the CRE **recombinase** under the control of an inducible promoter. In order to test this system a construct was designed that allows in planta monitoring of precise excision events using the firefly luciferase (LUC) reporter gene as a marker for recombination.

=> d 10 pi

L6 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001040492	A2	20010607	WO 2000-US42086	20001113
	WO 2001040492	A3	20020207		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6723896	B1	20040420	US 1999-439534	19991112
	CA 2391312	AA	20010607	CA 2000-2391312	20001113
	EP 1232275	A2	20020821	EP 2000-992497	20001113
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2004143874	A1	20040722	US 2004-755275	20040113

=> d 11-14 ti

L6 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Site-specific recombination in plant cell plastids via transit peptide-**recombinase** fusion expression

L6 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
TI Site-specific recombination system to manipulate the **plastid** genome of higher plants

L6 ANSWER 13 OF 14 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI Efficient elimination of selectable marker genes from the **plastid** genome by the CRE-lox site-specific recombination system.

L6 ANSWER 14 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 4
TI The **chloroplast**-located homolog of bacterial DNA **recombinase**.

=> d 11 ab

L6 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

AB By this invention, constructs and methods for genetic engineering of plant cells to provide for site-specific recombination of foreign DNA sequences inserted into the plant **plastid** are provided. In particular, **plastid** constructs are provided that comprise at least one DNA sequence, and at least two recombining sites. Particularly preferred constructs are those that employ Lox recombining sites. Another aspect of the present invention are recombinant nucleic acid constructs comprising a transcription initiation region functional in a plant cell, an organelle targeting sequence, and a nucleic acid sequence encoding **recombinase**. Also considered part of the present invention are the plants and plant cells comprising the constructs of the present invention. Another aspect of the present invention is to provide methods for directing site-specific recombination in a host plant cell **plastid**.

=> d 11 pi

L6 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001029241	A2	20010426	WO 2000-US28620	20001016
	WO 2001029241	A3	20011129		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2387876	AA	20010426	CA 2000-2387876	20001016
	BR 2000014858	A	20020716	BR 2000-14858	20001016
	EP 1222296	A2	20020717	EP 2000-972211	20001016
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
	US 6849778	B1	20050201	US 2000-688851	20001016

=> d 12 pi

L6 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001021768	A1	20010329	WO 2000-US25930	20000921
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2385484	AA	20010329	CA 2000-2385484	20000921
	EP 1218488	A1	20020703	EP 2000-963696	20000921
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
	US 2003088081	A1	20030508	US 2002-109812	20020329

=> d 13 pi

L6 ANSWER 13 OF 14 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

=> d 13 so

L6 ANSWER 13 OF 14 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
SO Plant Journal, (July, 2001) Vol. 27, No. 2, pp. 171-178. print.
ISSN: 0960-7412.

=> d 14 ab

L6 ANSWER 14 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 4
AB The cDNA for the **chloroplast**-located homolog of bacterial RecA protein, designated recA-AT, was placed in a plasmid appropriate for in vitro transcription and translation. Translation with 35S-labeled Met permitted demonstration of uptake of the protein product into isolated pea chloroplasts, and processing to a mature size. Preliminary evidence for the first amino acid was estimated from results using both 35S-Met and 3H-Leu for in vitro transcription and translation, followed by uptake into chloroplasts and processing. The labeled protein was subject to sequential amino acid hydrolyses, and radioactivity was measured in each round. Induction of gene transcription in leaves infiltrated with the DNA-damaging agent, methyl methanesulfonate was shown by Northern blot analysis. Further constructs were made for over-expression of the gene in E. coli; and one out of many tried permitted production of some soluble protein. Extracts from transformed bacteria were shown to have RecA activity using the "POM" assay [Bertrand et al. (1993) Nucl. Acids Res. 21: 3653] for DNA strand transfer. The protein was purified to close to homogeneity using methods developed for E. coli RecA isolation.

=> s ((maliga, p?) or (maliga p?))/au
L7 432 ((MALIGA, P?) OR (MALIGA P?))/AU

=> s l7 and (chloroplast or plastid)
L8 266 L7 AND (CHLOROPLAST OR PLASTID)

=> d l8 and (site specific or recombinase)
'AND' IS NOT A VALID FORMAT
'(SITE' IS NOT A VALID FORMAT
'SPECIFIC' IS NOT A VALID FORMAT
'OR' IS NOT A VALID FORMAT
'RECOMBINASE)' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ti

L8 ANSWER 1 OF 266 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
TI Affinity purification of the tobacco **plastid** RNA polymerase and in vitro reconstitution of the holoenzyme.

=> s l7 and (site specific or recombinase)
L9 25 L7 AND (SITE SPECIFIC OR RECOMBINASE)

=> dup rem l9
PROCESSING COMPLETED FOR L9
L10 12 DUP REM L9 (13 DUPLICATES REMOVED)

=> d 1-12 tri

NO VALID FORMATS ENTERED FOR FILE 'CAPLUS'
In a multifile environment, each file must have at least one valid format requested. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ti

L10 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Removal of heterologous sequences, such as selectable marker genes, from plastid genome by transiently expressed **site-specific** recombinases in higher plants

L10 ANSWER 2 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 1
TI A novel approach to plastid transformation utilizes the phiC31 phage integrase.

L10 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Plastid transformation in higher plants

L10 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI High level expression of immunogenic proteins in the plastids of higher plants and use thereof

L10 ANSWER 5 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 2
TI Identification of functional lox sites in the plastid genome.

L10 ANSWER 6 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 3
TI The plastid clpP1 protease gene is essential for plant development.

L10 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Use of integrases to promote the insertion of foreign DNA into the plastid genome

L10 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4
TI Engineering the plastid genome of higher plants

L10 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI **Site-specific** recombination system to manipulate the plastid genome of higher plants

L10 ANSWER 10 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 5
TI Efficient elimination of selectable marker genes from the plastid genome by the CRE-lox **site-specific** recombination system.

L10 ANSWER 11 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
TI **Site-specific** factor involved in the editing of the psbL mRNA in tobacco plastids.

L10 ANSWER 12 OF 12 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 7
TI Introduction of a heterologous editing site into the tobacco plastid

genome: the lack of RNA editing leads to a mutant phenotype.

=> d pi

L10 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004078935	A2	20040916	WO 2004-US6492	20040303

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 3 so

L10 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
SO Annual Review of Plant Biology (2004), 55, 289-313, 3 plates C1-C3
CODEN: ARPBDW

=> d 3 ab

L10 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. Plastids of higher plants are semi-autonomous organelles with a small, highly polyploid genome and their own transcription-translation machinery. This review provides an overview of the technol. for the genetic modification of the plastid genome including: vectors, marker genes and gene design, the use of gene knockouts and over-expression to probe plastid function and the application of **site-specific** recombinases for excision of target DNA. Examples for applications in basic science include the study of plastid gene transcription, mRNA editing, photosynthesis and evolution. Examples for biotechnol. applications are incorporation of transgenes in the plastid genome for containment and high-level expression of recombinant proteins for pharmaceutical and industrial applications. Plastid transformation is routine only in tobacco. Progress in implementing the technol. in other crops is discussed.

=> d 8 ab

L10 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4
AB A review with refs. The plastid genome of higher plants is an attractive target for engineering because it provides readily obtainable high protein levels, the feasibility of expressing multiple proteins from polycistronic mRNAs and gene containment through the lack of pollen transmission. A chloroplast-based expression system that is suitable for the com. production of recombinant proteins in tobacco leaves has been developed recently. This expression system includes vectors, expression cassettes and **site-specific** recombinases for the selective elimination of marker genes. Progress in expressing proteins that are biomedically relevant, in engineering metabolic pathways, and in manipulating photosynthesis and agronomic traits is discussed, as are the problems of implementing the technol. in crops. Tools for engineering the plastid genome have reached the level of sophistication that would support the com. production of recombinant proteins in tobacco leaves.

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=> d 8 so

L10  ANSWER 8 OF 12  CAPLUS  COPYRIGHT 2005 ACS on STN DUPLICATE 4
SO   Current Opinion in Plant Biology (2002), 5(2), 164-172
     CODEN: COPBFZ; ISSN: 1369-5266


=> d 9 so

L10  ANSWER 9 OF 12  CAPLUS  COPYRIGHT 2005 ACS on STN
SO   PCT Int. Appl., 83 pp.
     CODEN: PIXXD2


=> d 9 pi

L10  ANSWER 9 OF 12  CAPLUS  COPYRIGHT 2005 ACS on STN
     PATENT NO.          KIND   DATE        APPLICATION NO.          DATE
     ---------------     ----   --------    --------------------     --------
PI   WO 2001021768        A1    20010329    WO 2000-US25930          20000921
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
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     CA 2385484           AA    20010329    CA 2000-2385484          20000921
     EP 1218488           A1    20020703    EP 2000-963696           20000921
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             IE, SI, LT, LV, FI, RO, MK, CY, AL
     US 2003088081        A1    20030508    US 2002-109812           20020329


=> d 10 pi
'PI' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid
in at least one of the files.  Refer to file specific help messages
or the STNGUIDE file for information on formats available in
individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):so

L10  ANSWER 10 OF 12  AGRICOLA  Compiled and distributed by the National
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     (2005) on STN                                          DUPLICATE 5
SO   The Plant journal : for cell and molecular biology, July 2001. Vol. 27,
     No. 2. p. 171-178
     Publisher: Oxford : Blackwell Sciences Ltd.
     ISSN: 0960-7412


=> s ((corneille s?) or (corneille, s?))/au
L11         22 ((CORNEILLE S?) OR (CORNEILLE, S?))/AU

=>

=> s l11 and (plastid or chloroplast)
L12         17 L11 AND (PLASTID OR CHLOROPLAST)

=> dup rem l12
PROCESSING COMPLETED FOR L12
L13           9 DUP REM L12 (8 DUPLICATES REMOVED)

=> d 1-9 ti
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L13 ANSWER 1 OF 9 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 1
TI A novel approach to **plastid** transformation utilizes the phiC31 phage integrase.

L13 ANSWER 2 OF 9 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 2
TI Identification of functional lox sites in the **plastid** genome.

L13 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
TI Use of integrases to promote the insertion of foreign DNA into the **plastid** genome

L13 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
TI Site-specific recombination system to manipulate the **plastid** genome of higher plants

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TI Chloroplasts for the production of recombinant proteins.

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TI Efficient elimination of selectable marker genes from the **plastid** genome by the CRE-lox site-specific recombination system.

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TI Conservation of RNA editing between rice and maize plastids: are most editing events dispensable?

L13 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
TI Reduction of the plastoquinone pool by exogenous NADH and NADPH in higher plant chloroplasts. Characterization of a NAD(P)H-plastoquinone oxidoreductase activity

L13 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
TI Evidence for a migration of ndh genes from the **chloroplast** to the nucleus in black pine

=> d 4 pi

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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001021768	A1	20010329	WO 2000-US25930	20000921
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2385484	AA	20010329	CA 2000-2385484	20000921
EP 1218488	A1	20020703	EP 2000-963696	20000921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
US 2003088081	A1	20030508	US 2002-109812	20020329

=> d 5 so

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SO Photosynthesis Research, (2001) Vol. 69, No. 1-3, pp. 267. print.
Meeting Info.: 12th International Congress on Photosynthesis. Brisbane, Australia. August 18-23, 2001. International Society of Photosynthesis Research.
CODEN: PHRSDI. ISSN: 0166-8595.